

Channel Migration Zones

Critical Areas Ordinance Information Sheet

River channels periodically change their course. The area over which a river is likely to move over time is the channel migration zone. Channel migration zones are protected for two different purposes: public safety and aquatic habitat value. Because of the potential public safety risks, King County limits where structures are allowed within the channel migration zone. Channel migration zones are important to a healthy aquatic system because they provide a source of streambed materials. Channel migration zones have been mapped or will be mapped in the near future along several King County mainstem river channels that are at risk for the most significant channel migration. The proposed Critical Areas Ordinance continues and expands on the current regulations and will apply only to these mapped channel migration zones.

Designation and Mapping

Channel migration zones are designated for those mainstem river channels that demonstrate a history of streambank destabilization, rapid stream incision, stream bank erosion, and shifts in location of stream channels. These river channels are shown on King County's Channel Migration Hazard Maps. If an area lies behind a major roadway or flood hazard reduction facility that receives public maintenance to prevent streambank erosion, that area is not included in the mapped channel migration zone. Geologic features, such as erosion resistant bedrock, are also taken into account when defining the channel migration zone.

King County has mapped channel migration zones along the following river reaches:

- Lower Tolt River
- Lower Raging River
- Three forks of the Snoqualmie River
- Middle Green River

In the near future, King County will map channel migration zones along portions of the Cedar River, White River, South Fork of the Skykomish River (in King County), and the mainstem of the Snoqualmie River.

The **current** administrative rule defines two levels of hazard within channel migration zones: severe and moderate. The severe channel migration area is the area within the channel's probable migration over the next 100 years. The remainder of the channel migration zone, between the edge of the severe hazard area and the outer edge of the channel migration zone, is the moderate hazard area.

The **proposed** Critical Areas Ordinance incorporates this definition into the code.

Buffers

Aquatic areas buffers are generally measured from the edge of a stream or lake (see Aquatic Areas Information Sheet). If a stream has a mapped channel migration zone, the

proposed ordinance would measure the buffer from the outer edge of the severe channel migration hazard area. For example, if a stream's mapped severe channel migration area extends 75 feet beyond the current edge of the stream, the amount of required buffer for that stream would be measured beginning at 75 feet. In the rural area, the total area within the buffer, from the stream edge to the outer buffer edge, would be 240 feet (75 foot severe channel migration area + 165 foot aquatic area buffer).

What activities are allowed in channel migration zones?

Due to the significant risk of property damage, structures are generally prohibited in the severe channel migration area. With some limitations, structures may be allowed in the moderate channel migration area. However, since the stream buffer and the channel migration zone will have significant overlap, the limitations on activities allowed within a stream buffer may further limit the activities that are allowed in a channel migration zone.

The proposed Critical Areas Ordinance does include provisions that would allow some activity to take place in part of the severe channel migration area. For example, if the severe channel migration area extends 200 feet from the channel edge, the buffer would be a total of 365 feet from the existing channel edge (200 feet + 165 foot aquatic areas buffer). The proposed ordinance would allow additional activities in the area of the channel migration zone beyond the first 165 feet from the current channel edge. The channel migration zone limitations on structures in the severe channel migration area would still apply out to 200 feet.

Activities Allowed in Severe Channel Migration Area

Within the buffer of an aquatic area that includes a severe channel migration area, the following activities are allowed without a scientific study or compensatory mitigation:

- Existing bank stabilization structures (other than buildings) may be maintained or repaired, and new bank stabilization projects that use vegetation may be allowed;
- Existing flood protection facilities may be maintained or repaired;
- Existing primary structures may be maintained, repaired, modified, or expanded, generally without any expansion of the building footprint if the cost of the maintenance, repair, modification, or expansion is not more than fifty percent of the value of the existing primary structure;
- Accessory structures may be maintained, repaired, modified, or expanded, generally without expanding the footprint in the direction of the aquatic area if the total footprint of all existing and new accessory structures does not exceed one thousand square feet;
- Existing roads, water supply wells, and septic systems may be maintained or repaired;
- Human infrastructure may be removed as part of habitat recovery efforts; or
- New utility lines and water pipelines may be installed in existing roadways or railroad prisms.

Within an aquatic area that includes a severe channel migration hazard area, the following activities are allowed without a scientific study or compensatory mitigation:

- Culvert replacements are allowed if made fish-passable and the site is restored with native vegetation;
- Stream enhancement projects may be conducted under the direction of a qualified biologist; or
- Minor stream restoration projects may be conducted - limited to rock weirs, log controls, spawning gravel, and other specific salmon habitat improvements under the direction of a qualified biologist.

Activities Allowed outside of Standard Stream Buffer

- Some clearing and grading is allowed if it is limited to the area beyond the minimum aquatic area buffer width that would exist if there were no channel migration zone.

Moderate Channel Migration Zone

Within the moderate channel migration area, in addition to the allowed alterations for a severe channel migration area, the following activities are allowed:

- New dwelling units may be constructed on lots that existed before 1995, provided that it is not possible or feasible to construct elsewhere on the site; or
- Property may be subdivided, if the lots have 5,000 square feet or more of buildable land outside of the moderate channel migration area, and access routes and septic systems generally do not encroach on the moderate channel migration area.

To learn more

To learn more, access one of the following Web sites:

<http://www.metrokc.gov/ddes/cao>

<http://dnr.metrokc.gov/wlr/flood/migration.html>

See the Aquatic Areas Information Sheet and related materials for further information.